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No. 551

In the
Supreme Court of the United States
OCTOBER TERM, 1968

CORN PRODUCTS COMPANY,
Petitioner,
vs.
BAXTER LABORATORIES, INC.,
Respondent.

BRIEF IN OPPOSITION TO PETITION FOR A WRIT OF CERTIORARI

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FOREWORD

The Petition seeks a review by this Court of the Court of Appeals' decision that the Wallerstein patent had the "full disclosure" required by 35 U.S.C. 112.

There is no conflict with another Court of Appeals as to the matter.

The patent has now expired, so that the invention has entered the public domain.

The requirements of 35 U.S.C. 112, and similar prior requirements as to patent disclosures, have been ruled upon many times by this Court.

In short, there is no reason, and particularly no "special and important" reason, for review on writ of certiorari.

The principal reason urged in the Petition for the granting of the writ is an asserted conflict with the decision of this Court in *Beidler* v. *United States,* 253 U.S. 447 (1920). Additionally, the Court of Appeals is said to have disregarded Rule 52(a) of the Federal Rules of Civil Procedure.

Neither point is well taken.

While the statement in the Petition inadequately characterizes the invention here involved, the opinion of the Court of Appeals (394 F.2d 892, Petition p. 3a) properly describes it and gives sufficient background facts.

I.

THERE IS NO CONFLICT WITH THE DECISION OF THIS COURT IN BEIDLER v. UNITED STATES, 253 U.S. 447 (1920)

In *Beidler* v. *United States,* 253 U.S. 447 (1920), this Court held void a patent on a camera and developing apparatus. The apparatus and the manner of operation, as disclosed in the patent, would not provide a proper and useful development of the image. To modify the structure in order to render it operable was found to require "material changes" in construction from that disclosed in the description and drawings. It was in this connection that this Court stated, as quoted in the Petition (p. 4), that

> ". . . it has been consistently held that a correct and adequate description or disclosure of a claimed discovery . . . is essential to the validity of a patent, for the reason that such a disclosure is necessary in order to give the public the benefit of the invention after the patent shall expire."

The Wallerstein patent discloses an operable process and meets the requirements of 35 U.S.C. 112 (Petition, p. 1a). The Petition (p. 15) does state that "no one has been able to reproduce the examples of the process given in the patent (PA 164,568)". But what are the facts? At PA 164 one of the Petitioner's witnesses testified that he had performed each of the examples set forth in the Wallerstein patent, and that he consistently got lower yields. Were this the whole story, it would not establish inoperability because he did prove that he could practice the process—albeit not as well on the first try as the patentee had done.

But it is not the whole story.

Cross-examination brought out that the witness, on instructions of his superior, had used a particular enzyme in the experiment (PA 194). It was the remains of a small sample of enzyme, put out 8 years earlier "for experimental use only", and for conversion of cellulose—not starch. (PA 196-197). Other enzymes, recommended by the same commercial source for conversion of starch to dextrose, were readily available in the laboratory as well as commercially, but were not used (PA 200). When the superior who had decided to use the old "experimental" enzyme was later on the witness stand, he explained, "we knew ahead of time that it would not get good results" (PA 252). But even when trying to get poorer results, Petitioner established operability of Wallerstein's patent disclosure and demonstrated that it met the test of *Beidler* v. *United States, supra.*

In another test, Petitioner's technicians tried the patent examples with an enzyme appropriate for conversion of starch to dextrose. They then proved that when trying to get good results, they could follow the patent disclosure

and do so. Adhering to the procedures of Examples 1, 3, 4 and 5, Petitioner's technicians almost duplicated patentee's yields:

	Patent (PE pp. 2-3)	Petitioner's Duplication (PA 326-327)
Example 1		
DE	92	92.8
dextrose	90	88.5
Example 3		
DE	98	97.9
dextrose	95	96.9
Example 4		
DE	97	100
dextrose	97	99.1
Example 5		
DE	87	89.5
dextrose	84	85.3

In the foregoing test, Petitioner demonstrated that those skilled in the art can—and did—read the Wallerstein patent, understand it, and apply it.

The second reference to the record in support of the Petition's statement (p. 15) that no one has been able to reproduce the examples of the process given in the patent is to the testimony of one of Petitioner's witnesses that, in 1947, he could not have produced enzymes having the "k" value of the examples in the patent "without extensive experimentation" (PA 568). This is of no probative value, because no one would expect an M.D., working primarily in serology, having had no experience with enzymes for conversion of starch to dextrose, and not even knowing what enzymes were commercially available in 1947, to be able to produce such enzymes (PA 589-591, DA 37-40). But

even this witness admitted that at the time he testified (after the issuance of the Wallerstein patent and prior to its expiration) he could produce a suitable enzyme without experimentation (PA 584-5). Apparently his problem in 1947 was a then lack of knowledge of the available enzyme. He was not "too familiar" with the industry (PA 589), although he had done enough work by 1947 to know how to raise the "k" value of an enzyme (PA 595).

The Wallerstein patent is on a process of producing crystalline dextrose—not on an enzyme. Enzymes from many known sources, produced by various known techniques, will serve in the process. The significant point, as the patent clearly teaches, is that the enzyme have a "k" value of at least 1.0. And the District Court found that the "k" value determination is disclosed in such "full, clear, concise and exact terms as to enable any person skilled in the art" to determine it. (Petition p. 29a).

The patent disclosure, directed to those skilled in the art, states (P.E. 1, col. 2, lines 46-51):

> "The starch-glucogenase enzymes useful in the invention may be obtained from various fungal sources, particularly the species of Aspergillus, such as *Aspergillus oryzae* and from certain bacterial species, for example, *Clostridium aceto-butylicum.*"

In *Loom Co.* v. *Higgins,* 105 U.S. 580, 585 (1881), this Court said:

> "• • • When an astronomer reports that a comet is to be seen with the telescope in the constellation of Auriga, in so many degrees of declination, and so many hours and minutes of right ascension, it is all Greek to the unskilled in science; but other astronomers will instantly direct their telescopes to the very point in the heavens where the stranger has made his entrance into our system. They understand the language of their brother scientist • • •."

Thus it was that Petitioner's scientists, upon reading the Wallerstein patent, had no criticism of its disclosure with respect to enzymes. Within a few months of the issuance of the Wallerstein patent, one of Petitioner's scientists read it and commented in part (PE 5):

> "• • • The process is limited somewhat at present by the cost of available enzymes and the unavailability in industrial quantities of most suitable enzymes. However, very high yields, 90-95 per cent or higher, of dextrose which readily crystallizes is quite possible, particularly *with our know-how, on the choice and use of particular fungal glucosidases.*" (Emphasis added)

The author continued by pointing out that early work had been with enzymes prepared from *Aspergillus oryzae* (specifically mentioned by Wallerstein) but that work by "Northern Regional" (N.R.R.L., Northern Regional Research Laboratory of the U.S. Dept. of Agriculture) and by Petitioner, itself, showed that Rhizopus or *Aspergillus niger* yield glucosidase in a very high ratio (PE 5).

Petitioner's scientists were never at a loss as to the specific microorganism to employ, as the Petition might suggest. They understood, as Wallerstein taught, that there were many and varied available sources. As these scientists explained from time to time:

> "The ability to form an enzyme system which will convert a 17 DE starch hydrolyzate to about 90 per cent dextrose, d.b., is fairly common among members of the *Aspergillus niger* group" (PE 109).

> "Further, other members of the *Aspergillus* group can be used with equally good results" (PE 23).

Petitioner's scientists also understood Wallerstein as teaching purification of the enzyme.

> "In brief, the 'k' value is an expression of the purity of an enzyme preparation." (PE 26)
>
> • • •
>
> "Mr. Wallerstein thus maintains that in order to obtain the objectives of his 'discovery', it is necessary to use an enzyme preparation of sufficient purity that the enzyme preparation will have a 'k' value of at least 1.0." (PE 28)

And when these same scientists began to purify enzymes, they employed one of the well-known "classical methods" of purification (PE 86, 161)—the same method used by Wallerstein (PA 146).

As Petitioner's witnesses testified (PA 219, 235, 394, 594-5), and as documents coming from Petitioner's files (e.g. PE 5, 23-4, 86, 114-20) and the prior art (e.g. PE 154, 178, 183, 198) show, fungal sources, and enzyme production and purification techniques were well known. Petitioner in producing its enzymes for commercial use had to learn nothing from Wallerstein. It merely used standard, accepted technology:

> "All of the steps are standard steps accepted in the art as being normal steps in the attaining of an enzyme concentrate or an enzyme preparation." (PA 394)

The statutory requirement of a disclosure directed to those skilled in the art was met by Wallerstein. The truly novel features of his invention were fully described; the context in which his invention has commercial significance was understood. As the Court in *Loom Co.* v. *Higgins*, 105 U.S. 580, 586 held:

> ". . . That which is common and well known is as if it were written out in the patent . . . ."

The Court of Appeals properly applied this law. No conflict is shown with *Beidler* or numerous other decisions by this Court in which particular facets of the statutory disclosure requirement have long since entered the realm of settled law.* No change in the law is shown. No conflict among subsequent decisions of the Court of Appeals is asserted.

II.

RULE 52(a) OF THE FEDERAL RULES OF CIVIL PROCEDURE WAS NOT DISREGARDED BY THE COURT OF APPEALS

The divergence of views between the District Court and the Court of Appeals was not as to the basic facts. It was as to proper legal criteria. For example, the Petition (p. 8) states (the indicated emphasis is by Petitioner):

> "Judge Parsons after fifteen days of trial found that:
>
> > 'In 1960, the defendant substituted enzymes for acid as a hydrolizing agent. This would *not have resulted in the economic commercial production* of crystalline dextrose if the immediately preceding developments had not been made *by the defendant.*' (Appendix p. 25a)"

Observe that the District Court considered that the test was whether Wallerstein's disclosure, alone, would lead to "economic commercial production." Of course, there is no such requirement for disclosure. The disclosure

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* See e.g. *Wood* v. *Underhill, et al.*, 46 U.S. 4 (1847); *Seabury* v. *Am Ende*, 152 U.S. 561 (1894); *Expanded Metal Co.* v. *Bradford*, 214 U.S. 366 (1909); *Hildreth* v. *Mastoras*, 257 U.S. 27 (1921); *Eibel Co.* v. *Paper Co.*, 261 U.S. 45 (1923).

must be of a useful process, and must be sufficient to enable those skilled in the art to practice it; but it need not meet any test of "economic" commercial operation—with all of its variables of cost of raw starch, price of crystalline dextrose, cost of power, cost of labor, interest rate on capital invested, etc.

As pointed out above, the decision of this Court in *Beidler* v. *United States*, 253 U.S. 447 (1920), upon which Petitioner relies, establishes no such rule. What *Beidler* stands for is that a disclosure is not adequate when, in order to make the device operable, one must omit structure and mode of operation which is disclosed, and replace it with structure and mode of operation which is not disclosed.

An applicable decision of this Court is *Hildreth* v. *Mastoras*, 257 U.S. 27 (1921) which points out (p. 34):

> "* * * It is not necessary, in order to sustain a generic patent, to show that the device is a commercial success. The machine patented may be imperfect in its operation; but if it embodies the generic principle, and works, that is, if it actually and mechanically performs, though only in a crude way, the important function by which it makes the substantial change claimed for it in the art, it is enough. *Telephone Cases*, 126 U.S. 1, 535; *Mergenthaler Linotype Co.* v. *Press Publishing Co.*, 57 Fed. 502, 505."

There is not enough data in the record with which to judge the commercial costs and economics implicit in the District Court's finding. But the Court of Appeals wasted no effort on this immaterial point. Instead, in evaluating the patent, it directed attention to that which this Court held critical in *Hildreth* v. *Mastoras, supra*, i.e., "the important function by which it makes the substantial change claimed for it in the art." (Petition p. 10a):

"The object of the patent in suit was to effect hydrolysis under such conditions that

a) 'crystallization is markedly facilitated;'

b) 'the production of undesirable by-products of little value minimized', and

c) 'increased yields of dextrose are obtained.'

"In 1954, defendant, after studying the Wallerstein patent, obtained these objects and did so before it invented an improved enzyme and before removing transglucosidase."

The evidence fully supports this statement.

As to crystallization, in 1954, Petitioner's scientists observed (PE 111):

"Just why crystallization of dextrose from an enzyme-converted liquor should be so much more rapid than crystallization from an acid converted liquor is difficult to understand. * * *"

As to undesirable by-products, in 1954 the same group observed (PE 112):

"* * * The important differences between enzyme process mother liquor and acid process hydrol are a lower HMF content, and a lack of bitter unpalatable materials in the enzyme process mother liquor. * * *"

Finally, as to increased yields of dextrose, in 1954 Petitioner was obtaining hydrolyzates with higher dextrose percentages than the 86-87% achieved in its acid hyrolyzates (PA 427). Petitioner, in doing so, recognized that no specific enzyme from some specified source was required. Its 1954 report showed (PE 109):

"The ability to form an enzyme system which will convert a 17 D.E. starch hydrolyzate to about 90 per cent dextrose, d.b., is fairly common among members of the *Aspergillus niger* groups."

The Petition states, with emphasis by Petitioner (pages 9-10):

> "The trial court found that the patent utterly failed to disclose the identity of such enzyme or its method of preparation:
>
> > 'I am convinced from the testimony at the trial that this description of the "k" value of the enzyme preparation is not described so as to provide one skilled in the art "full, clear, concise and exact" directions as to *how to make an enzyme preparation with the potency needed for the successful practice of the process Wallerstein attempted to patent.*' (Appendix p. 29a-30a)."

* * *

This does not convey the proper impression of what the District Court intended. The Court had heard one of Petitioner's scientists testify that as early as 1938 or 1940, those skilled in the art knew how to produce enzymes (PA 368), and had seen documents demonstrating the same fact (e.g. PE 154 *et seq.*, 180, 184). The evidence showed that in its commercial production of enzymes Petitioner had merely employed "standard steps", "accepted in the art as being normal steps" in such production (PA 394). Further the District Court found that the patent fully disclosed how to determine the "k" value (Petition, pp. 28a-29a).

Instead, the District Court's meaning must be found from the sentence opening the paragraph from which the Petitioner quotes, and which immediately precedes the Petitioner's quotation. This sentence reads (with emphasis supplied by the District Court, Petition p. 29a):

> "The patent specifications state that the enzyme preparation to be employed 'will have a "k" value *of the order of* 1.0' * * *"

The District Court's opinion was that disclosure of a "k" value "of the order of 1.0" was not enough. Such finding need not be examined, because it is immaterial. The phrase "of the order of" appears only in a general discussion of the enzyme. Additionally the patent states that "k" values of 10 or more may be used and the claims specify "at least 1.0." This is clear to one skilled in the art who knows how to produce enzymes, and how to raise their "k" value "without very much trouble" (PA 595).

The District Court's finding that a specific enzyme from a specific source is not disclosed (Petition, p. 10) flows from an examination of the patent itself. The Court of Appeals did not reverse the finding. It merely held that the significant identification, "k" value, was fully disclosed and that since the specific source was immaterial as a scientific fact, it was immaterial in a patent disclosure. A specific source, *Aspergillus oryzae,* and, broadly, other species of *Aspergillus* were disclosed (PE 1, col. 2, lines 46-51).

Under the heading, "The Trial Court Found Wallerstein's Patent Was Not The Basis For Petitioner's Process", the Petition (pp. 12-14) quotes extensive fragments from the District Court's opinion. The most significant of these findings is that in about 1949 Petitioner investigated the commercial feasibility of enzymatic conversion of starch in producing *crystalline* dextrose. This was in error. Petitioner, like others in the art prior to Wallerstein's disclosure, was working on syrups (PA 312). Petitioner first produced *crystalline* dextrose from an enzyme hydrolyzate in 1954 (PE 95), as is more fully discussed above.

In this same regard, the Petition may be misleading. The Petition (p. 22) quotes a fragment from the Court of Appeals decision as follows:

> "'The patent in suit discloses and claims the basic steps necessary to the successful enzyme hydrolysis of starch . . .' (Appendix, p. 6a)."

This is not what the Court of Appeals said, or had in mind. The "successful enzyme hydrolysis of starch" had been accomplished prior to Wallerstein, as the Petition points out (pp. 7-8) and as the evidence shows (e.g. PE 154, 178, 183). The art knew of appropriate enzymes and how to produce them. But the art did not have the key to so conducting the hydrolysis as to produce *crystalline* dextrose. The Court of Appeals recognized this. Its full sentence (Petition p. 6a) was:

> "The patent in suit discloses and claims as invention the basic steps necessary to the successful enzyme hydrolysis of starch *to produce a dextrose hydrolyzate of such character that discrete crystals of dextrose may be readily obtained.*" (Emphasis added).

The patent fully discloses that this may be accomplished by limiting any preliminary acid treatment, and using an enzyme from any of the known sources, such as *Aspergillus oryzae*, which has a "k" value of at least 1.0 (PE 1, col. 1, lines 40-51, col. 2, lines 23-33, PE 2, col. 1, lines 14-70, and Examples 1-5). Petitioner's scientists so read the patent and, on the first effort at crystallization achieved the result so readily that they commented (PE 111):

> "Just why crystallization of dextrose from an enzyme-converted liquor should be so much more rapid than crystallization from an acid converted liquor is difficult to understand."

Though they wondered as to the "why" of the phenomenon, they were nonetheless readily able to achieve it.

CONCLUSION

For the reasons set forth, the Petition for a Writ of Certiorari should be denied.

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